PATENT
Customer No. 22,852
Attorney Docket No. 08350.0553

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	
Kurtis Chad KELLEY et al.	Group Art Unit: 3748
Application No.: 10/029,024	Examiner: Nguyen, Tu Minh
Filed: December 28, 2001	
For: SYSTEM FOR AGGLOMERATING EXHAUSTED PARTICULATE MATTER	Confirmation No.: 3804

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

DECLARATION UNDER 37 C.F.R. § 1.131

I, Kurtis Chad Kelley, state that I am one of the named applicants of the above-identified application and am one of the co-inventors of the subject matter described and claimed therein. Prior to December 6, 2001, Matthew Joseph Maroon and I had completed in this country the invention as described and claimed in the above-identified application as evidenced by the following:

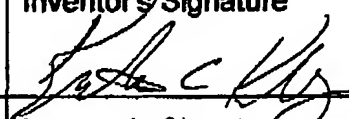
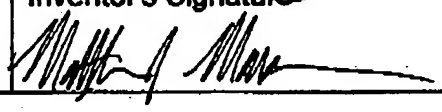
1. I described the invention in an invention notification form (INF), which is a standard form used by my employer, prior to December 6, 2001.

2. I submitted the completed INF to the intellectual property department of my employer, and the INF was stamped as received by that department prior to December 6, 2001.

A redacted version of the INF is attached to this Declaration as Exhibit A. This redacted INF fully describes the subject matter claimed in independent claims 1, 6, and

10 of the above-identified patent application. I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that the statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patents issuing thereon.

Respectfully submitted,

Full Name of First Inventor	Inventor's Signature	Date
Kurtis Chad Kelley		09/01/05
Full Name of Second Inventor	Inventor's Signature	Date
Matthew Joseph Maroon		08/31/05

Attachments: Exhibit A including two sheets of a redacted version of the INF.

Redacted

The major setback in controlling diesel particulate emissions has been the size of the particulates that need to be filtered out of the exiting gas. This device resolves the problem by causing the very small particulates to agglomerate in the exhaust system, thereby making them easier to filter out. In an inline style engine, the exhaust gas from the exhaust manifold is split into two streams of gas, each containing roughly the same number of particulates (see Figure A). In a V-style engine, each side of the engine has its own exhaust manifold, leading to individual exhaust pipes. The agglomerate device can be placed into each of these exhaust pipes and thus the gas stream does not need to be split. Each stream of gas passes through an insulated exhaust pipe fitted with many smaller diameter pipes (see Figure B). These small diameter pipes carry a very large voltage across them. This voltage is large enough to impart a charge on the small particles passing through them. One side of the exhaust is charged positively, conversely the other side is charged negatively. These particles, traveling at high velocities, are then channeled back into a joint exhaust pipe where interparticle impingement will take place (see Figure C). At the meshing point the particles, being of opposite charges, will agglomerate together. The resulting particles are larger in diameter and will be much easier to filter out of the exhaust stream. These larger particles are now the ideal size to be filtered out at high efficiencies by a hurricane trap (see Figure A).

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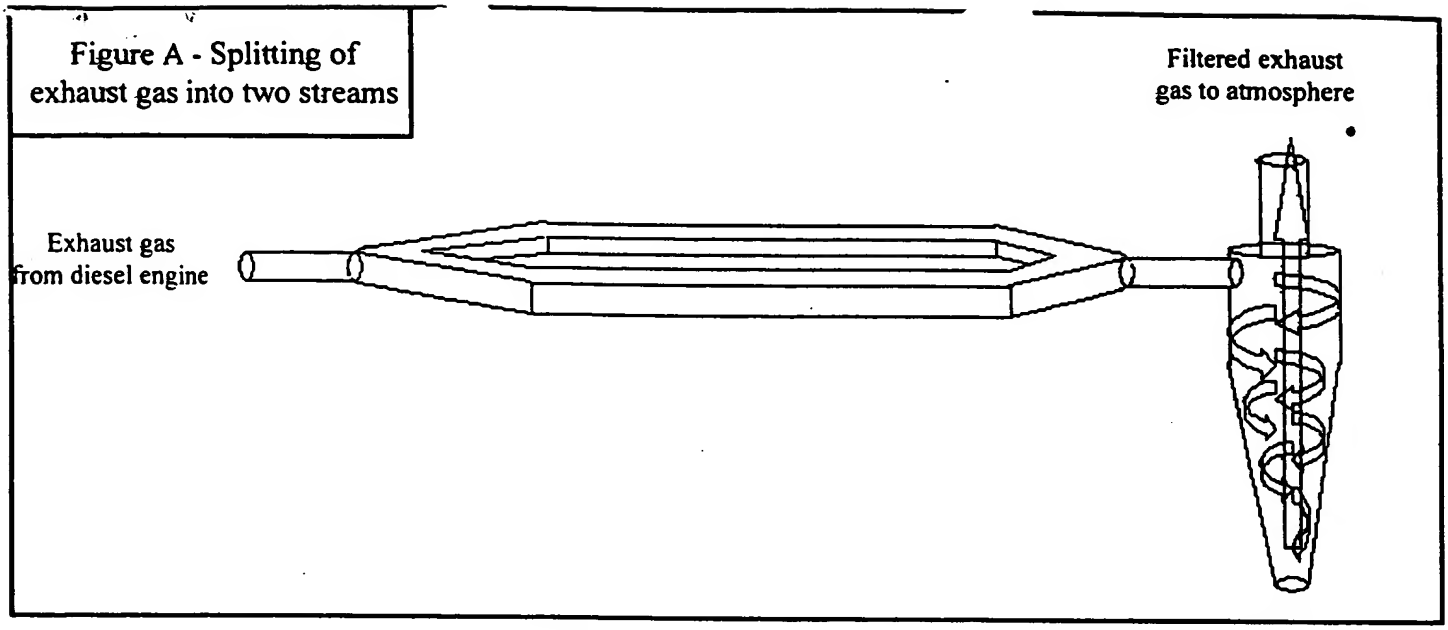
Figure A - Splitting of exhaust gas into two streams



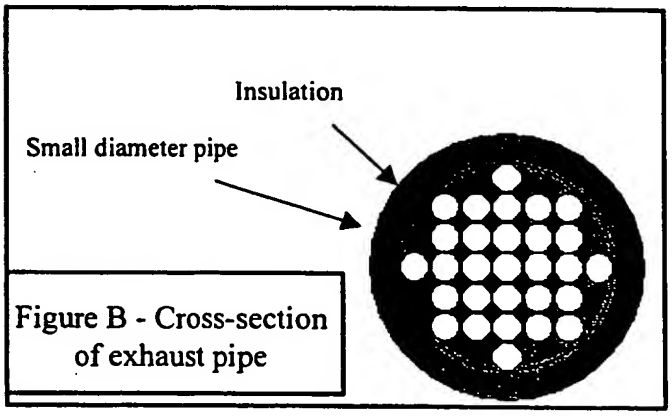


Figure B - Cross-section of exhaust pipe

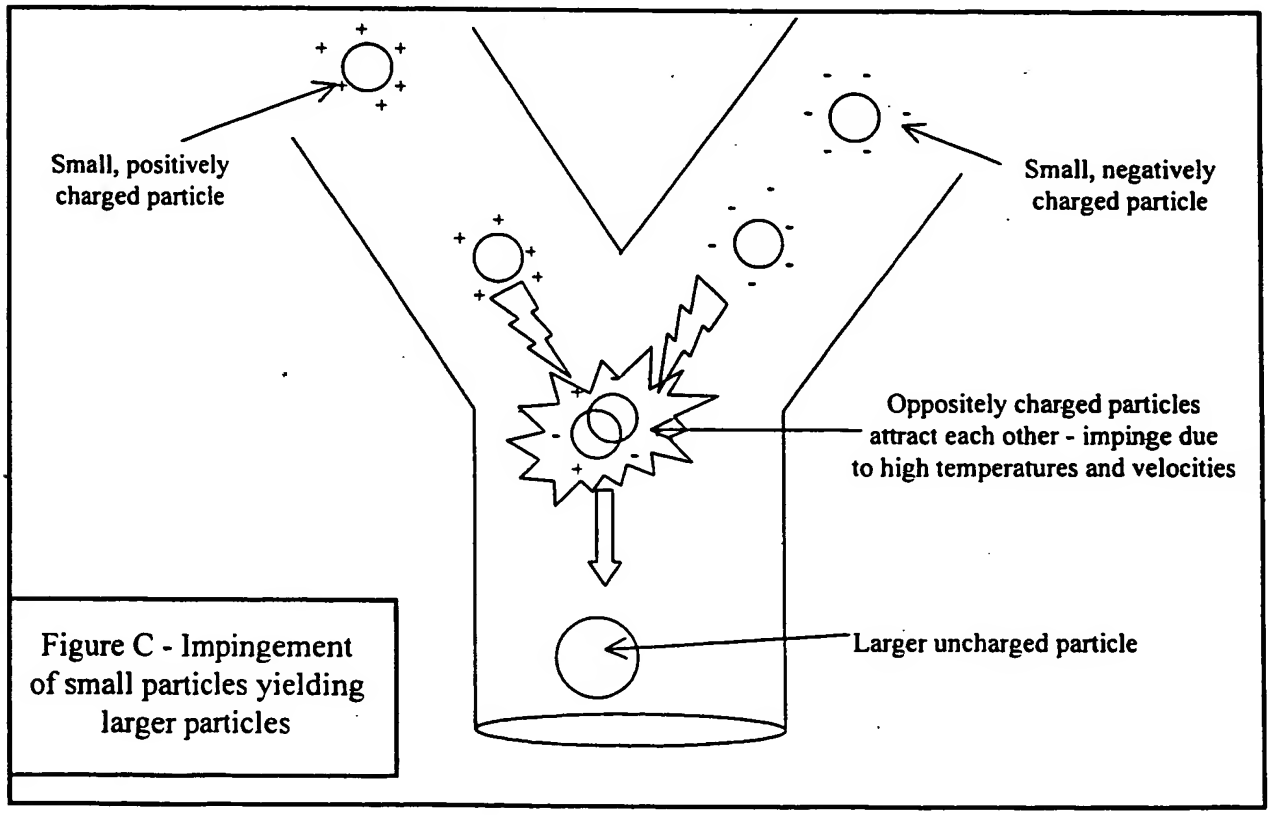


Figure C - Impingement of small particles yielding larger particles

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